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ABSTRACT

Province-wide examinations as a graduation requirement were reinstated in British Columbia after a 10-year hiatus in 1983. This study assessed the impact of grade-12 subject examinations (embodied in the Provincial Examination Program) on students, teachers, administrators, employers, and the school system. Completed survey questionnaires were received from 1,833 students, 606 parents, 947 teachers, 160 principals, and 137 counselors. Interviews were conducted with 14 personnel officers from employers in the Province and 20 postsecondary admissions officers. Focus groups of students, teachers, parents, and administrators provided further information. Overall, the examination program appeared to be relatively well accepted. The most frequently suggested change was a decrease in the weighting given the examination in relation to the school marks in determining the student's final grade. Many respondents, particularly teachers and principals, called for an increased focus on critical thinking skills and problem solving, with less emphasis on the recall of information. Several respondents pointed out that the examinations were developed for the student intending to go on to higher education, without comparable attention to the majority of students leaving the educational system. In spite of the suggestions for change, it appeared that the Provincial Examination Program was working well. (SLD)

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What Are Some of the Effects of Province-wide Examinations: The Findings*

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April 19, 1990

1 Context of the Provincial Examinations

Although government administered, school leaving examinations had been a part of the British Columbia education system since its inception, they were abolished in 1973. A ten year hiatus existed from 1973 to 1983, but due to various factors, this type of examination was re-introduced in British Columbia in 1983.

Since the 1983/84 school year, students in British Columbia who wish to graduate have been required to write the end-of-course provincial examination set for either English 12 or Communications 12, and for each of the other examinable Grade 12 academic course in which they enroll. These examinations are administered three times a year — in January following completion of first-semester courses; in June following completion of second-semester and full year courses; and in August for students who wish to write a supplemental examination to improve a course standing and for students, who, due to extenuating circumstances, were not able to write in January or June. In addition to English 12 and Communications 12, thirteen other courses are tested: Algebra 12, Biology 12, Physics 12, Chemistry 12, Geology 12, Literature 12, Geography 12, History 12, French 12, Francais-Langue 12, German 12, Spanish 12, and Latin 12 [1]

*Paper presented at the annual meeting of the National Council on Measurement in Education and the American Educational Research Association, Boston, April, 1990. Data for this study were collected under contract to the British Columbia Ministry of Education and appreciation is expressed to them for permission to use those data.

†A complete report of the study, conducted and authored by John O. Anderson and Walter Muir of the University of Victoria, David Bateson and David Blackmore of the University of British Columbia, and W. Todd Rogers of the University of Alberta, may be obtained from the British Columbia Ministry of Education

[1]Other academic Grade 12 courses which are not examined include, for example, Computer Science 12, Geometry 12, Law 12, and Western Civilisation 12.

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The purposes of this Provincial Examination Program stated by the Ministry of Education are:

> ... to ensure that grade 12 students meet consistent provincial standards of achievement in the academic subjects. The examination program will also ensure that graduating students from all schools in the province will be treated equitably when applying for admission to universities and other post-secondary institutes. An additional purpose of this program is to respond to strong public concerns for improved standards of education [5, p.6].

The examination for each course is set by a committee of experienced teachers in the subject area. Referenced to provincially-established curriculum goals and objectives for the course, both selection (multiple choice) and supply (problems; short answer; essay) items are used within each examination to measure knowledge, application, and higher order thinking skills [4, p.22, Table 1].

The tests are administered by teachers in the schools according to an administration schedule set by the Ministry of Education. Seven days are required for administration of the full set of 15 examinations. With the exception of English 12 and Communications 12, the time to write each test is set at two hours. The English 12 and Communications 12 examinations are three hours in length to allow time for students to do the required writing and reading of selections. Students wishing to be considered for Government Scholarships write for an additional hour in each of the examinations they write other than English and Communications.

All students enrolled in the examined courses and attending a public school, a Group 1, 2 or 4 independent school [2] are required to write the Provincial examinations. Students attending Group 3 and Group 5 schools may also write these examinations upon payment of an examination fee. Altogether, approximately 87 000 regular tests and 6 500 scholarship examinations are written each year by approximately 34 000 to 35 000 and 6 000 to 7 000 students respectively.

Examinations are marked at a central location. Supply items are marked by teams of subject area teachers assembled together for a period of one to three weeks. Standard marking procedures are followed [4, p.21]. The scores from these items are then combined with the scores from the selection items, obtained through computer marking, to form the final test scores. These scores are adjusted to control for variation in examination difficulty and then converted to letter grades taking into account the quality of the papers and the distribution of letter grades awarded by the schools. Prior to their use, the grades and their distributions are reviewed and approved by the Board of Examiners.

Up through 1988/89, the provincial examination mark was combined with the school awarded mark so that each component contributed equally to the

[2] Effective September, 1989, new categories for independent schools were established by the Provincial Government so that they now number five [3, pp.19-20;26].

final composite or aggregate grade for each course. Starting in 1989/90, the contribution of the provincial examinations will be reduced to 40%.

The Grade 12 examination program is supervised and administered by the Student Assessment Branch, Ministry of Education under the general direction of an independent Provincial Board of Examiners. Members of the Board, appointed by the Lieutenant-Governor in Council, include representatives of the various educational constituencies that are affected by decisions made by the Board. The teachers who set and mark the examinations are selected by the Ministry from among those who apply to serve on these committees. The yearly costs of the program are approximately 2.5 million dollars.

2 Overview of the Study

The Provincial Examination Program in British Columbia is a complex activity involving a number of constituent groups made up of large numbers of individuals, each with a stake in the operation of, and outcomes from the program.

The constituent groups include students who must prepare for and write the Provincial Examinations; parents who are interested in their children in this final year of schooling; teachers who provide the learning environment and educational experiences to help their students prepare for the examinations and who take part in the development and administration of the program; principals of the schools in which the learning and teaching take place and in which the examinations are administered; counsellors who assist students with personal problems and provide vocational guidance; superintendents who administer the school districts; employers who play a role in the student's vocational life both during and upon completion of grade 12; and admissions officers of post-secondary institutes who are responsible for decisions regarding grade 12 graduates' further educational involvement.

The intent of the present study was to assess the influence of the Provincial Examination Program upon these people and what they do. Specifically, the purpose of the present study was to:

> *investigate the impacts of the provincial Grade 12 examinations upon students, parents, teachers, school and school district administrators, post-secondary administrators, and employers of high school graduates; and upon the curriculum, teaching practice, and school administration at the class, school, district, and provincial levels at Grade 12 and lower grades.*

To make this assessment, the views and perceptions of these constituent groups were solicited using survey questionnaires and interview schedules developed and tailored to each group. Each questionnaire or interview schedule contained items on a number of specific issues to which respondents were to

react in terms of the changes brought about by the introduction of the Provincial Examinations, and the effects of the change upon the educational system. In addition, each respondent was invited to add additional comments about the perceived strengths and weaknesses of the program, and their overall evaluation of the program. Also, a number of employers and admissions officers of post-secondary institutions were interviewed to obtain information regarding their use of the results of the Provincial Examination Program in hiring or admissions processes.

In total, completed survey questionnaires were received from 1 833 students, 606 parents, 947 teachers, 160 principals, and 137 counsellors. More than three-quarters of these respondents made additional written comments. These comments can provide the reader with an awareness and appreciation of individual, as opposed to general, perspectives on the effects of the Provincial Examination Program. Fourteen personnel officers from employers in the province and 20 post-secondary admissions officers were interviewed.

Another component of the study was to convene "focus groups" of students, parents, teachers and administrators at various locations in the province. These groups met and discussed the issues raised by the study. Summaries and transcripts of these meetings provided additional insight regarding the impact of the Examination Program.

The detailed results of the analyses of the responses from the constituent groups are presented and discussed in the document *The Impact of Provincial Examinations on Education in British Columbia: General Report*[1]. The *General Report* contains all data, interview summaries and transcripts collected in the study as well as a detailed analysis of the context of the Provincial Examination Program in British Columbia.

A *Summary Report*[2] contains an overview of the findings presented in the *General Report*, followed by a brief summary. Each report concludes with one major recommendation and two additional series of recommendations: those directed at The Ministry of Education, and those related to further research.

3 Summary of Findings

This overview of findings is presented in terms of the extent to which the intentions of the Provincial Examination Program have been met, as well as the "general" or "overall" effects of the program on students, teachers, teaching practices and schools, and the use being made of the exams. The overview concludes with a general summary.

It must be remembered that a "summary" masks important details and individual results. The Provincial Examination Program not only has effects and implications for the general population, but also has substantial effects on individuals; it is a "high stakes" program for individual people. Examining general trends, which might frequently be interpreted from the total data as having

"no overall effect", does not provide an awareness and appreciation of the major effects, both positive and negative, that the program can have on particular students or small groups. Reading the questionnaire comments made by individuals and perusing the interview transcripts which are included in the previously mentioned *General Report*, will give the reader a better understanding of the serious effects and consequences the Provincial Examination Program can have, and has had, on particular individuals.

3.1 Intentions

One of the stated intentions of the Provincial Examination Program was to enhance the equity of treatment students received from post-secondary institutions (colleges and universities), and employers. In regard to post-secondary institutions, this intention appears to have been satisfied in that there is a perception of enhanced consistency and equity for students. However, the admissions officers do not generally use provincial examination marks *per se* in making admission decisions. The educational criteria used for admission are secondary graduation status and grades. Employers of high school graduates tend not use the results of the Examination Program in the decisions regarding selection of students for employment. If educational criteria are applied, employers consider only general secondary school graduation status, rather than grades on individual courses.

Another intention of the program was to cause a closer adherence to the Provincial Curriculum. It appears that this intention, too, has been satisfied to a considerable extent, and the effect is generally viewed as being beneficial to the educational system. However, the associated narrowing of the content of instruction has been viewed as a negative aspect of the Provincial Examination Program.

In regard to the intention of providing an increased challenge to students, many respondents indicated that students had been provided with additional challenge, to "some extent". The effect was reported as being moderately beneficial. However, in written comments and interviews, students often referred to the increased motivation, and their increased work and study as benefits of the Examination Program.

The Examination Program was also intended to enhance the status of the teaching profession. In this intention, the program has not succeeded in the view of most respondents. The program was also intended to enhance the confidence of teachers with respect to curriculum and evaluation. Respondents indicated that this had been achieved "to some extent".

Respondents of all constituent groups were somewhat ambivalent in commenting on the effect of the Examination Program on their own standards of educational achievement. Most indicated that their standards had been high prior to the introduction of the Examination Program, many then said their standards had been maintained or had risen slightly, and fewer said that standards had decreased. In summary, there was no clear direction as to the effects

of the Provincial Examination Program upon individuals' standards for student achievement.

3.2 Students

The Examination Program has led to a noted increase in the level of stress in the lives of grade 12 students. This is viewed as the major problem with the program from the perspective of the students themselves. A few respondents noted that there were other likely sources contributing to the stress felt by students, including the fact that grade 12 is the final year of the students' public educational program and most students would be heading toward full-time employment, further education, or new, but unknown fields. Nonetheless, the questionnaire data and the written comments in particular indicate that stress is a significant factor associated with the Examination Program.

On the plus side, the program has led to students working harder, studying more and increasing their apparent sense of responsibility — all characteristics which are viewed positively by the respondents. Additionally, in general, students' extra-curricular activities do not seem to be greatly affected by the Provincial Examination Program.

There were concerns expressed in regard to the examinations and the issue of fairness. The major concern was based on the structure of the examination itself. Concentration of so much of the student's school "career" into a single two hour test worries respondents. A common example offered was that of the student, whose performance all year has been satisfactory, but can have an "off day" or experience extreme anxiety in an examination situation, perform poorly on the exam, and end up with a low final grade. That is not seen as fair. From another view, students can "slack off" all year then write the Provincial Examination and pass. That is not seen as fair either. Another concern regarding fairness is associated with the differences in the difficulty of the examinations from one administration to the next, and the "scaling" of the marks. Respondents pointed out that this raised further questions of fairness regarding the Examination Program.

Students have also been influenced by the Examination Program to become more "test-wise", more attentive to, and knowledgeable about, the tests themselves. There has been more attention paid to test taking skills, and more practice in writing formal tests at the grade 12 level, and this has trickled down to the lower grades within the schools.

3.3 Teaching Practice

In the view of many teachers, principals, counsellors and superintendents, the Provincial Examination Program has had a major influence on the teaching practices within grade 12 classrooms in that the examination has become the focus of instructional content — in effect, the examinations result in "teaching

to the test", or "what's on the examination is what's in the grade 12 program." However, what is demanded by the examination tends to be a narrow sampling of course content that allows little flexibility in approach. The examinations also tend to force a focus on memorization of knowledge — recall of course related information — as opposed to critical thinking and problem solving types of processing.

More time is now spent on test-related activities in schools. These activities include more time spent on examination coaching by the teachers, more use of out-of-class tutorials, more time spent on testing within classrooms with more tests, more use of multiple-choice items, and less use of written assignments.

The Provincial Examination Program has affected the selection of courses by students, with an apparent increase in the selection of non-examinable courses. Since the examinable courses are generally viewed as more difficult, students seem to feel that they can reduce their workload by selecting non-examinable courses. This is supported by the reported difference in "status" of courses with examinable subjects viewed as having higher status than non-examinables.

The Provincial Exams, however, have not greatly affected several aspects of teaching practices such as class size, and interaction between grade 12 teachers and their students, or amongst teachers at different grade levels or in different subject areas.

3.4 Teachers

A major effect of the Examination Program upon teachers is the dissatisfaction related to the aforementioned narrowing of the curriculum. This has led to greater standardization of the program, which is viewed as a benefit by many respondents. In regard to effects on teachers, this has led to a reduced flexibility to choose the topics to work with in a particular curriculum, and the methods used and the depth with which these can be covered. Teachers are more obliged to follow an external description of the instructional program. In this way, the control of the course has been removed from the hands of the teachers.

This removal of a sense of control may have contributed to the reported negative effects of the Provincial Examination Program upon the morale of teachers and to the reported increase in stress teachers experience. However, comments from teachers indicated that there are a number of factors, in addition to the Examination Program, that have led to the increasing sense of stress experienced by teachers.

3.5 Schools

Schools have been affected by the examinations most directly through their actual involvement with the administration of the examinations and the preparation of students to write them. This has resulted in problems associated with overall school timetabling.

Schools have been prompted to change due to the provision of additional preparation for students writing Provincial Examinations. One of the changes reported was the provision, to a greater extent than in the past, of school-wide examination programs at the grade 12 level, and also in lower grades. Another change was the increase in the amount of coaching or out-of-class tutoring provided by teachers.

Respondents related the Provincial Examination Program to the accountability of schools. However, the issue was not directly addressed in the sense of answering the question: "Are the schools more accountable because of the Provincial Exams?" The comments by parents suggest that the Examination Program gives them more "comfort" about the schools through the standardization of the grade 12 program that the Examination Program engenders. The "standardization" of the curriculum was viewed by parents a benefit of the Examination Program and that this standardization leads to more equity in the education provided to students. Although the questionnaire results suggest that the schools are more accountable; parents, teachers, counsellors, principals and superintendents report that perceptions of confidence in schools and of the effectiveness of schools has not changed. This seems to suggest that confidence in the schools has been relatively high in the past and the changes effected by the Provincial Examination Program have maintained this level of confidence.

3.6 Utilization of Examination Results

The use of examination materials is quite evident in the classroom — the preparation of students for the exams. Copies of old examinations and descriptions of examination structure (that is, *Examination Specifications*) serve as bases for developing course materials and as practice tests in grade 12 classrooms. This use of examination materials was viewed positively by respondents.

The use of examination results for evaluating teachers or schools was generally viewed negatively; as being detrimental to the educational system. Although there were consistent views regarding the effects of of these practices (generally detrimental), there were differences across respondent groups in regard to the amount of teacher and school evaluation occurring. Teachers considered that there was more teacher evaluation (based on examination results) occurring than did either principals or superintendents. Related to this is the finding that all respondent groups reported a substantial amount of comparison of examination results across schools, districts and the province. This situation of differing views on the uses made of examination results and the consistent views in regard to the amount of comparative interpretation of examination results suggests that there is no systematic procedure(s) for interpretation of examination results at a level of aggregation beyond the student level.

3.7 Provincial Examination Program

Overall, the Provincial Examination Program appears to be relatively well accepted. The evaluations given by respondents in their written comments were essentially positive. However, a number of modifications were suggested. The most frequently suggested change was a decrease in the weighting given the Provincial Examination mark in relation to the school mark in determining a student's final grade. Many respondents noted that the recently implemented reduction in Provincial Examination weighting from 50% to 40% was appropriate as it stood, and many others said that it was a move in the right direction but further reductions should be taken.

Other main targets for modifications were the examinations themselves, and the examination procedures. The examinations were generally viewed as tests of recall, demanding that students memorize information from grade 12 courses in order to obtain a good score. Many respondents, particularly teachers and principals, suggested that a better focus for examinations would be on critical thinking skills and problem solving.

There were mixed views on a number of other examination related issues. One centred on the procedures used in the development of the examinations such as the formation and operations of the committees that develop the examinations. Some teachers viewed the procedures quite negatively whereas others viewed their participation in the examination program as a very positive professional development experience. However, it should be noted that the majority of responding teachers (approximately 65%) have not served on either Examination Development Committees nor on Examination Marking Committees. A number of teachers were critical of the "scaling" of the examination scores before deriving a student's final grade. They viewed the procedure as undermining the credibility the results and therefore the Examination Program itself.

In regard to the examination procedures, time was a focus of concern. In relation to the classroom, teachers and students noted the press of time in covering all of the material necessary for preparation for the examination — there was no time left in class to pursue alternate topics. In relation to the school, principals noted the timetabling problems associated with the Examination Program. In relation to the examinations themselves, students noted time pressures of two forms: by having to write examinations scheduled so close together that a student "...could not catch her breath" between exams; and the two hours allotted to write an examination was not sufficient. In addition, some parents noted that the examination results were available too late to be of use in application for entry to college or university.

A number of respondents, parents in particular, pointed out that the Examination Program was developed for the academic student, those who intend to go on to further education upon graduation from high school. Yet, the majority of students do not go on to post-secondary education. The creation and implementation of a high profile Examination Program for a minority of stu-

dents, with no comparable attention given to the majority of students leaving the educational system, was viewed as somewhat of an inequity.

Overall, the findings of this study indicate that the Provincial Examination Program is functioning as an accepted part of the educational system in British Columbia. Although there was a small number of respondents who suggested that the program be discontinued, the responses and comments from the majority of respondents indicated that the program is working well. However, most respondents did suggest modifications that could be implemented to improve the performance of the Provincial Examination Program.

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